STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
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July 29, 1985

CERTIFIED RETURN RECEIPT REQUESTED
(P402 457 208)

Mr. Glenn M. Eurick
Environmental & Occupational
Health Coordinator
Barrick Mercur Gold Mines, Inc.
P. O. Box 838
Tooele, Utah 84074

Dear Mr. Eurick:

RE: Conditional Approval for Leach Dump Area 1, Mercur Mine, ACT/045/013, Tooele County, Utah

The Division has reviewed information submitted regarding the proposed Leach Dump Area 1. Due to the incomplete submittal of the proposed leach dump areas and the possible addition of other mining operation facilities to the mine plan in adjacent areas which will affect the reclamation plans for the dump leach areas, the Division cannot give complete and unconditional approval of the dump leach Area 1.

At present, the design requirements for the initial construction and operation of dump leach Area 1 have been met and no outstanding concerns remain from the Division. Questions and concerns in the attached review document are concerned primarily with the final reclamation design and configuration for the leach dump area. Conditional approval to proceed with the construction and operation of Leach Dump Area 1 is hereby approved with the following stipulations:

1. Barrick Mercur Gold Mines will post a reclamation bond in the amount of $4,197,593. This amount shall be posted by Barrick to replace the current reclamation contract for the Mercur Mine between Getty Mining Company and the Division. This amount is identical to that provided in the Mercur Mine Reclamation Cost Estimate and submitted to the Division on July 12, 1985. This amount will be held by the Division until a completed reclamation plan has been provided by Barrick and approved by the Division.

2. The conditional approval to proceed with the construction and operation of leach dump Area 1 will not release Barrick Mercur Gold Mines, Inc., from complying with or satisfying any additional concerns or requirements as indicated in the attached review document or by other state and federal agencies.

3. Barrick Mercur Gold Mines shall respond to the following concerns and comments of the attached review document with their proposal for additional mining operations in the adjacent area, or, separately. In any case, Barrick shall respond to all requests for additional information concerning the proposed dump leach operation on or before October 30, 1985 as part of the terms and conditions for conditional approval to operate dump leach Area 1.

Should you have any further concerns or questions, please call.

Sincerely,

L. P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

JRH:jvb
cc: W. Hedberg
S. Linner
R. Harden
P. Grubaugh-Littig
1001R-28 & 29

COMMENTS CONCERNING PROPOSED DUMP LEACH AREA

Barrick Mercur Gold Mines, Inc.
Mercur Gold Mine
ACT/045/013, Tooele County, Utah

July 29, 1985

RULE M-3(1)(n) - Response to Paragraph 1 - TJS

The response indicates the flow velocity down gradient "to be less than 1,000 feet per year due to structural complexities of the area." It is unknown where this value came from. To determine the average linear velocity, the hydraulic conductivity, porosity and head gradient of the aquifer must be defined. Hydraulic conductivity can be determined from transmissivity if the aquifer thickness is known. Porosity can be approximated by reference to similar regions but is preferably established by laboratory analysis. The head gradient can be determined from a potentiometric surface map. Based on the information submitted, the applicant could not have estimated the 1,000 feet per day value.

Due to the time and effort required to determine the head gradient and the porosity of the aquifer, the Division shall base its finding on the following points:

1. The protective liner which is proposed in the June 18 response will provide adequate protection;

2. The alkaline environment of the ground-water system in the Oquirrh Mountains (based on information from the Kennecott ground-water study) would provide an oxidizing environment for any cyanide which was able to leak from the leach dump area;

3. With the low transmissivity and complex structures in the area, any leakage would tend to disperse and oxidize.

To insure that the ground-water system is protected, the following stipulations must be incorporated into the operation and reclamation plan:

1. Upon review of final design configuration of the leach dumps, the Division shall determine the appropriate level of residual concentration of free cyanide left in solution;

2. While the leach dump is being neutralized, at least one test for arsenic, lead and heavy metals will be conducted and the results submitted to this office for review;

3. Surface runoff facilities will be constructed to divert surface runoff around and away from the heap;

4. An acceptable impervious cap will cover the entire top of the heap and will be sloped so all precipitation which falls on the cap will flow into the surface runoff facilities.

Response to Paragraph 2 - TJS

The response by the applicant, regarding surface runoff control structure design, addressed only a few of the questions raised. The company "failed to demonstrate that the leach dump liners will hold the leach solution volume in addition to a 10-year, 24-hour precipitation event."

Also based on the information provided, velocities in the diversion and bypass ditches are in the range of 0.73 to 18 feet per second. The Division cannot approve ditch velocities which are greater than the maximum allowable velocity for the materials for which the ditch is constructed. Therefore, the applicant must provide a determination of the proposed velocity and the maximum allowable velocity for each ditch. For each ditch with a proposed velocity greater than this maximum allowable velocity, a design of erosion protection (riprap, filter blankets, gabions, etc.) must be provided.

Rule M-3(2)(e) - SLC

The applicant's response is satisfactory except for the reference to covering the dumps with impermeable clay shale prior to reclamation. This is not desirable from the standpoint of reclamation, and should not be done unless required by some other authority. If a clay cap is required, the applicant will need to place at least two feet of soil material over the clay to seed grasses and at three to four feet of suitable material to plant shrubs and trees.

Rule M-10(12) - SCL

Paragraph 1 -The applicant has committed to submit maps of all disturbed areas and newly permitted areas showing vegetation types on a 1" = 200' scale drawing with the 1985 Annual Report for the Mercur Mine. This commitment is acceptable to the Division.

Barrick Mercur Gold Mines did not supply the vegetation species lists as requested in the original review and should do so.

Paragraph 2 has been adequately addressed by the applicant.

Rule M-5 - SCL/JRH

The applicant has adequately addressed the information requested in this section. However, changes in the estimated costs for reclamation are expected to change based upon reclamation design changes as a result of changes or commitments made in order to address the concerns in this review document, and, those changes expected as a result of additional disturbances (additional mining activities expected to be proposed by Barrick early this fall). As part of the new proposal expected from Barrick, the applicant shall modify and resubmit a new cost estimate for mine reclamation with their new proposal.

Soil Comments - TLP

The concerns in paragraphs #2 and #3 have been satisfactorily answered in a letter requesting permission to begin topsoil removal. Barrick has also committed to survey the new topsoil stockpile as soon as stripping has been completed in order to accurately determine the depth of topsoil that can be redistributed. This appears to satisfy those comments made in paragraphs #1 and #4.

Engineering - Item 1 - JRH

The applicant has sufficiently responded to the concerns of this item.

Engineering - Item 6 - JRH

The applicant has indicated that they will contact MSHA requesting a preconstruction meeting. This meeting will resolve any safety or health issues for operation. Barrick shall notify the Division in writing when the meeting was held, who attended and what the results or concerns of that meeting were.

Engineering Rule M-10(4) and (8) - JRH

The applicant has not sufficiently addressed concerns regarding the ultimate layout for the leach dump pads. Drawings will be required indicating the expected ultimate contours for reclamation including the establishment of surface drainage and water diversions. Due to the expected changes in the final contours of the area due to other proposed adjacent mine operations, the applicant will be required to furnish such drawings with the proposal for the additional mining areas.

Engineering - Rule M-10(6) - JRH

The applicant has sufficiently responded to concerns regarding final treatment of cyanide during operation except as noted elsewhere in this document. Other agencies may also have additional concerns regarding the final treatment and disposition of the leach dump.